

No 38

P

11

Dec 4th 1826

By J. Sanson

Do

Printed - March 20th 1827
W. R. H.

Inaugural Dissertation

On

Apoplexy

By

John M. Bernhisel, M.D.,

Member of the Philadelphia Medical Society.

Apr. 1871
W. B. H.

Journal of Observations

on
the
subject
of

John M. Bennett
a paper read before the
Academy of Natural Sciences

To

W. Chapman, M.D.

Professor of the Institutes and Practice of Physic and
Clinical Practice in the University of Pennsylvania;

And

Thomas C. James, M.D.

Professor of Midwifery in the University of Pennsylvania;

As a small tribute of gratitude for the friendship and
politeness you have on so many occasions shown me,

This Dissertation

Is most Respectfully Inscribed

By your sincere and much

Obliged friend,

The Author.

On

Inaugural Dissertation

On

Apoplexy.

Definition.

Apoplexy is that disease in which the animal functions are suspended, while the vital and natural functions continue, respiration being in general difficult and laborious, and frequently attended with a peculiar noise, called stertorous.

History.

It attacks either sex, and no age is entirely exempt.

Journal of the

Journal of the

Journal of the

Journal of the

Journal of the

Journal of the

ed from becoming affected with this disease: it sometimes attacks persons in infancy, in youth, and in the meridian of life; but chiefly those who are far advanced in years.

It is supposed that persons who are of a particular formation of body, are peculiarly predisposed to this direful malady, most usually those who have large heads and short thick necks, more especially if there be much irritability in their muscular and nervous systems.

Persons who are of a plethoric habit, and those who have led an inactive and sedentary life, made use of a full diet, and indulged in frequent intoxication, are more subject to this disease than others.

It is observed that apoplexy occurs most frequently in cold winters, or in warm springs

It is necessary to observe that the same is
not the case in all cases. In some cases
it is necessary to observe that the same is
not the case in all cases.

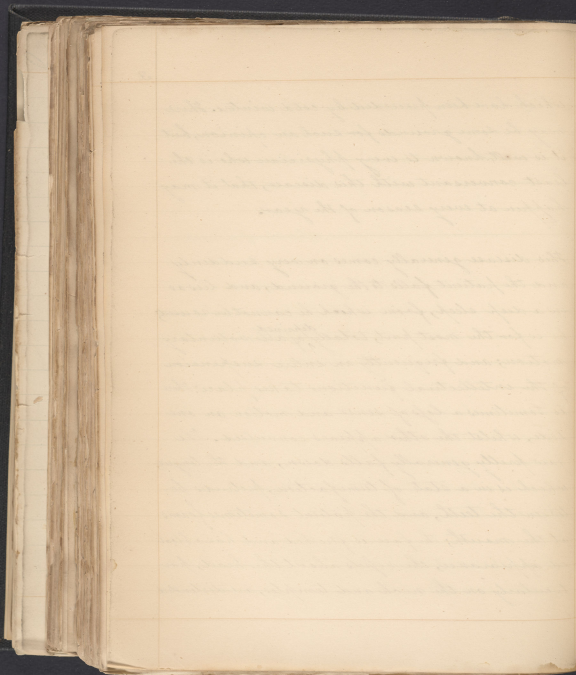
It is necessary to observe that the same is
not the case in all cases. In some cases
it is necessary to observe that the same is
not the case in all cases.

It is necessary to observe that the same is
not the case in all cases. In some cases
it is necessary to observe that the same is
not the case in all cases.

It is necessary to observe that the same is
not the case in all cases. In some cases
it is necessary to observe that the same is
not the case in all cases.

which have been preceded by cold winters. There may be some grounds for such an opinion, but it is well known to every physician who is the least conversant with this disease, that it may happen at every season of the year.

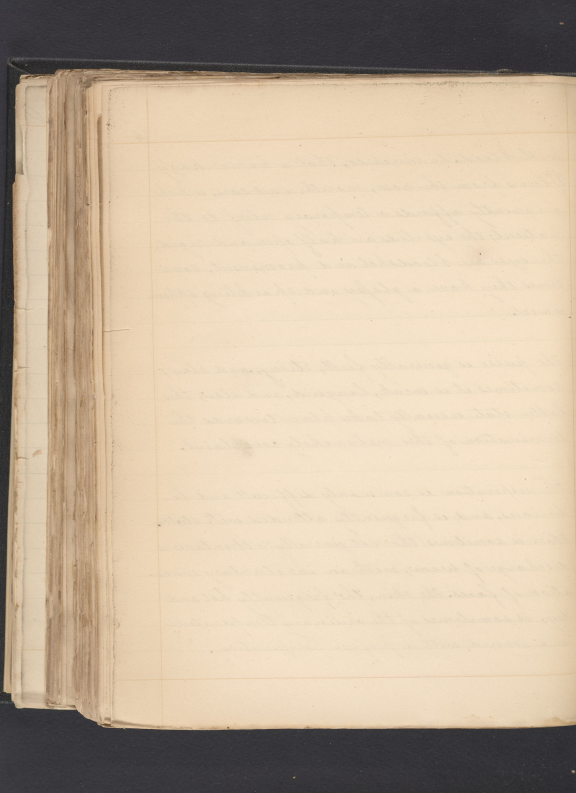
This disease generally comes on very suddenly and the patient falls to the ground, and lies as in a deep sleep, from which he cannot be roused; he is for the most part, totally ^{deprived} of all voluntary motion; and frequently an entire suspension of the intellectual functions takes place: there is sometimes a loss of sense and motion on one side, whilst the other appears convulsed. The jaw pretty generally falls down, and the tongue, which is in a state of tumefaction, protrudes between the teeth, and the patient sometimes foams at the mouth; the face is flushed and has a bloated appearance, the vessels about the head, particularly on the neck and temples, are distended



with blood, so much so, that a hæmorrhage ^{often} occurs from the nose, mouth, and ears, which frequently affords a temporary relief to the patient; the eye-lids are half open and rigid, the eyes are bloodshot and prominent, sometimes they have a glassy and sparkling appearance.

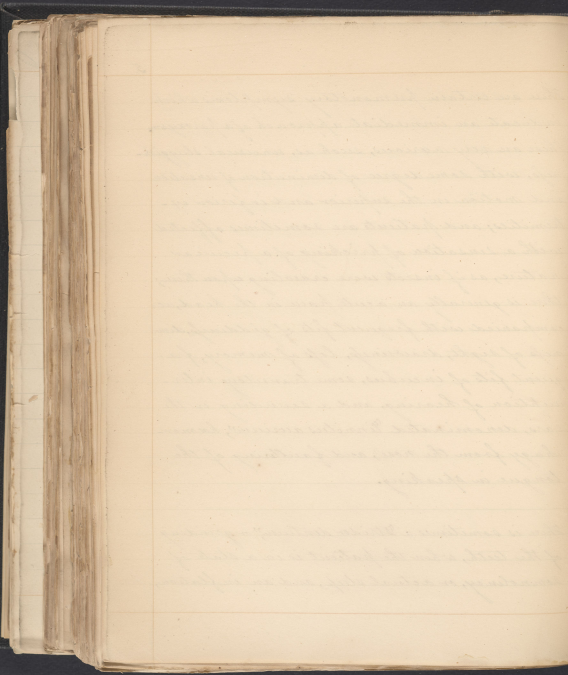
The pulse is generally full, strong, and slow; sometimes it is weak, languid, and slow, this latter state usually takes place towards the termination of this melancholy complaint.

The respiration is commonly difficult and laborious, and is frequently attended with stertor. There is sometimes (tho' not generally) a spontaneous discharge of urine, with an involuntary evacuation of feces. The skin, tho' frequently hot and dry, is sometimes of the ordinary temperature and covered with a profuse perspiration.



There are certain premonitory symptoms which indicate an immediate approach of a paroxysm. These are very various, such as, unusual sluggishness, with some degree of diminution of sensation and motion in the superior and inferior extremities; and patients are sometimes affected with a sensation of pricking of a peculiar nature, as if insects were crawling upon them; there is generally an acute pain in the head, accompanied with frequent fits of giddiness, dimness of sight, drowsiness, loss of memory, frequent fits of incubus, some transitory interruption of hearing, and a sounding in the ears, denominated "tinnitus aurium", hæmorrhage from the nose, and faltering of the tongue in speaking.

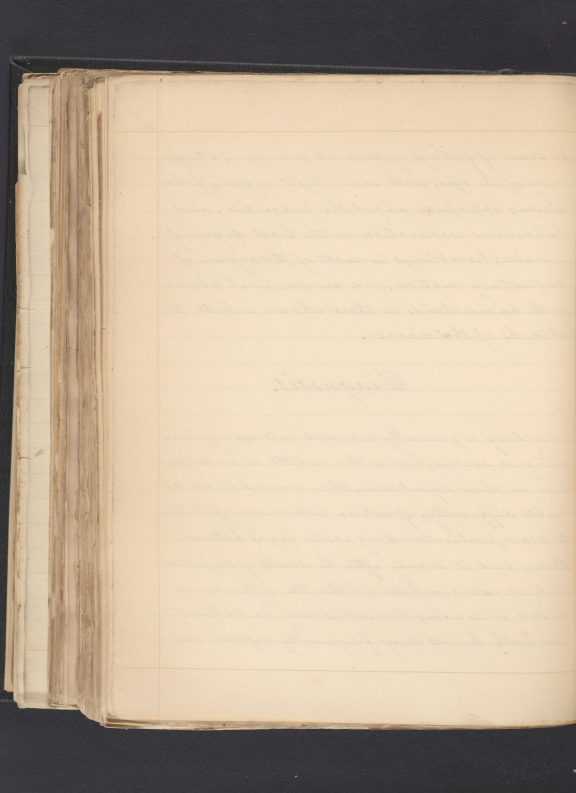
There is sometimes a "Stridor dentium", or grinding of the teeth, when the patient is in a state of somnolency, or actual sleep, and an inflation,



or sense of fulness of the neck and face; a turgescency of the eyes, with some slight degree of false vision; oppression about the præcordia, and laborious respiration on the least degree of exercise; tremblings in most of the organs of voluntary motion, and an unusual absence of the hæmorrhoids in those who are subject to attacks of that disease.

Diagnosis.

Apoplexy is generally divided into sanguineous and serous, but as there is little or no difference in their symptoms, there would be considerable difficulty, if not an entire impossibility to draw particular diagnostic signs between them, and it is only after the death of the patient that we can ascertain whether the effusion is blood or serum; nor is this very important, for both kinds may frequently depend on

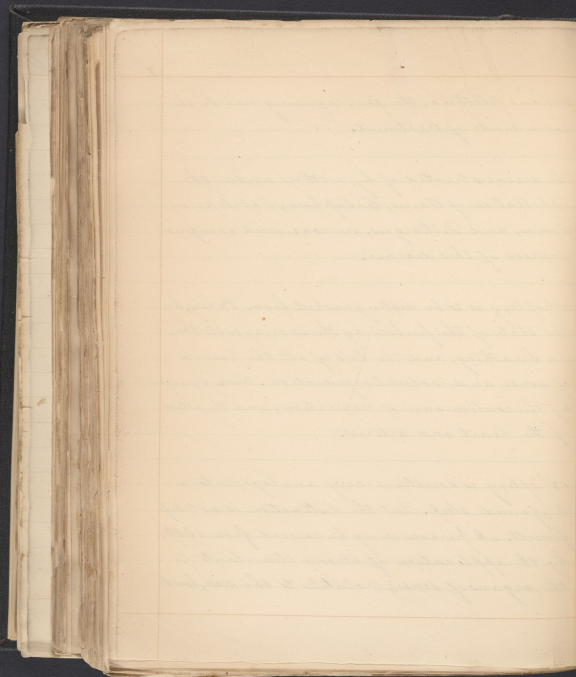


7.
venous plethora, therefore, requiring nearly the same mode of treatment.

The diseases treated of by authors under the appellation of Coma, Cataphora, Catalepsia, Lethargus, and Sopor, are considered as inferior degrees of this disease.

Apoplexy is to be distinguished from Palsy, by the state of the pulse, by the snoring or stertorous breathing, and the loss of all the powers of sense and voluntary motion. From Syncope by the continuance of respiration, and the action of the heart and arteries.

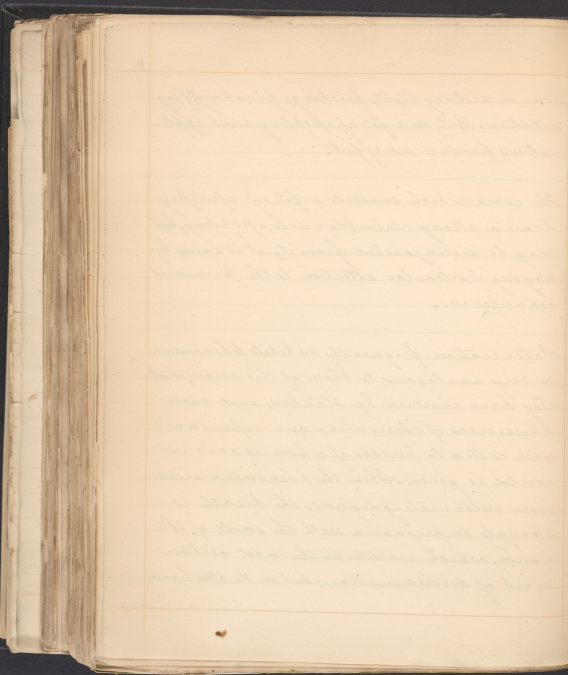
Apoplexy is sometimes very analogous to a profound sleep. But the distinction is not difficult. A person may be roused from sleep, by the application of strong stimulants to the organs of sense; volatiles to the nose, loud



sounds, a strong light, pricking, pinching, or flagellation. But in a fit of apoplexy such applications produce no effect.

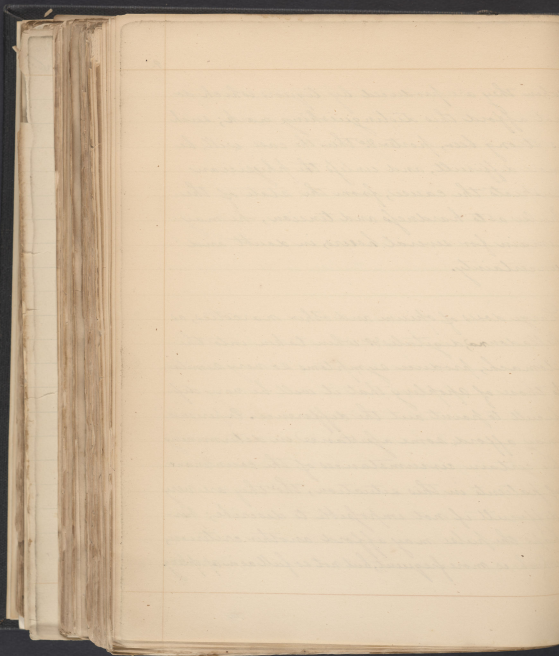
The coma which succeeds a fit of epilepsy bears a strong resemblance to apoplexy, but may be distinguished from it, it is said, by paying particular attention to the previous convulsions.

Intoxication frequently exhibits phenomena so very analogous to those of this disease, that they have alarmed by-standers, and even physicians of observation and experience, when called to persons of whom no account could be given. When the phenomena arise from intoxicating liquors, the breath is strongly impregnated with the smell of the liquor, which constitutes the most certain mark of discrimination; but on the other hand,



when they are produced by liquors which do not afford this distinguishing mark; such as strong beer, porter &c. then the case will be more difficult, and unless the physician suspects the cause, from the state of the pulse as to hardness and tension, he may remain for several hours, in doubt and uncertainty.

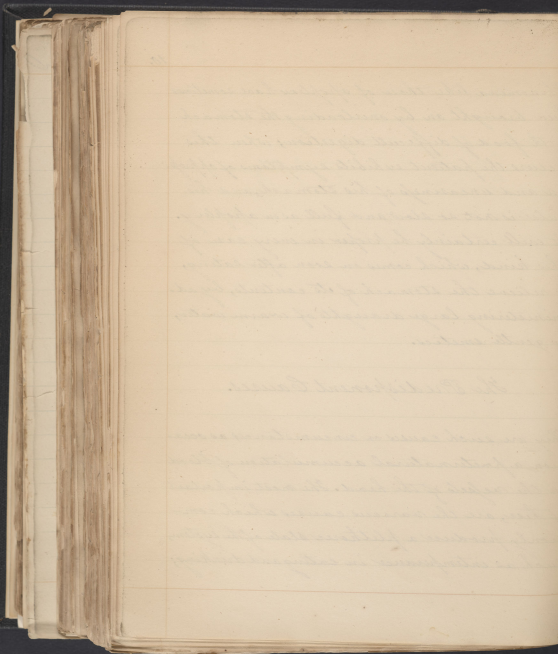
Large doses of opium and other narcotics, as belladonna, digitalis &c. when taken into the stomach, produce symptoms so very similar to those of apoplexy that it will be very difficult to point out the difference. Experience may afford some assistance in determining by certain circumstances of the countenance of patients in this situation, tho' they are very difficult if not impossible to describe; perhaps the pulse may afford another criterion, which is more frequent, but not so full as in apoplexy.



Phenomena like those of apoplexy have sometimes been brought on by overloading the stomach with food of difficult digestion; when this occurs the patient exhibits symptoms of oppression and uneasiness of his stomach, and his pulse is not so slow and full as in apoplexy. It will certainly be proper in every case of this kind, which comes on soon after eating, to relieve the stomach of its contents, by administering large draughts of warm water, or gentle emetics.

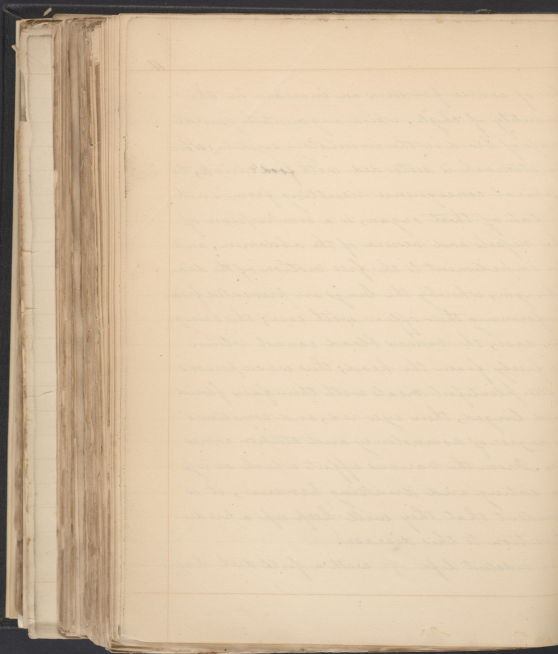
The Predisponent Causes.

They are such causes or circumstances as occasion a preternatural accumulation of blood in the vessels of the head. The most important of these, are the various causes which commonly produce a plethoric state of the system, such as intemperance in eating and drinking;



this of course produces an increase in the quantity of chyle, which augments the general mass of blood in the circulatory system; when the stomach is distended with food & drink, the natural consequence resulting from such a state of that organ, is a compression of the vessels and viscera of the abdomen, and an impediment to the free motion of the diaphragm, whereby the lungs are prevented from performing their office with ease; this being the case, the venous blood cannot return so freely from the head; thus we see persons after plentiful meals with their faces florid and turgid, their eyes red, and sometimes a degree of somnolency and stupor comes on. From the various effects which excess in eating and drinking produces, it is evident that they will keep up a predisposition to this disease.

An indolent life with a full diet has



a tendency to produce general plethora, and therefore frequently proves a predisposing cause of this complaint.

Suppression of any long-accustomed evacuation, as an evacuation of blood from the hemorrhoidal vessels, forming the disease known by the name of the bleeding piles, hæmorrhage from the nose after it has become habitual, by producing fulness in the system, is another predisposing cause of apoplexy.

A large head is said to be a circumstance which predisposes to this disease, and many are of opinion that it occurs more frequently in such cases than in others; whether the uncommon size of the head, as some suppose, is only an effect of the predisposing cause, and is to be considered as produced by the determination of the blood, rather than

occasioning it, is difficult to determine.

A short neck is also said to occasion a predisposition to apoplexy; this is highly probable, because the heart must be much nearer the head, consequently the blood must flow with more rapidity through the arteries to the head; while on the other hand, the return of the blood through the veins is more easily interrupted.

Corpulency is mentioned by medical writers as another predisposing cause, and is supposed to produce this effect by compressing the vessels in every part of the body except the head; if this be the case the blood of course must accumulate and produce compression of the brain; respiration becomes difficult to perform, and may impede the free return of blood from the head.

... of the

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

...

Exposure of the feet to cold and wet, predisposes to apoplexy, by producing a languid circulation, and diminishing the quantity of blood in the inferior extremities, consequently there will be a greater determination of that fluid to the head.

Painful and long application of the mind to any one subject, frequently produces a determination of blood to the head.

Old age predisposes to this disease by producing a determination of blood to the head, which frequently takes place without any obvious cause.

The Exciting Causes.

There are such powers as either increase the momentum or velocity of blood in its circulation

I have just had a letter from Mr. [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]

The [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]

through the vessels of the head, or suddenly augment the quantity of blood in the vessels of the brain. Among these may be mentioned,

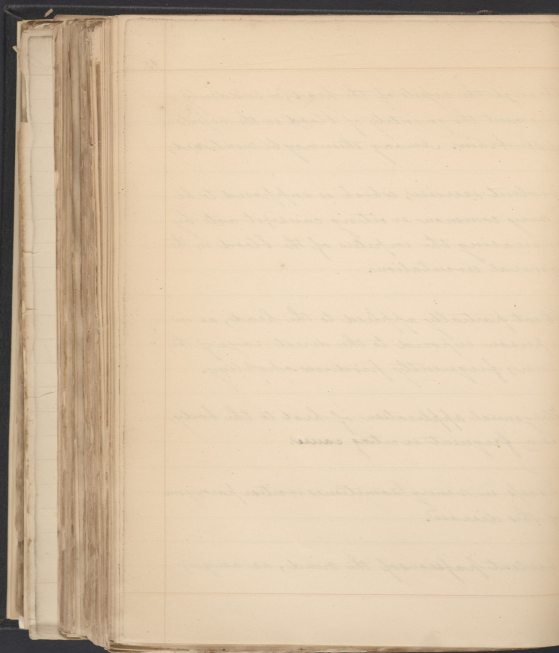
Violent exercise, which is supposed to be a very common exciting cause; it acts by increasing the impetus of the blood in the general circulation.

Heat partially applied to the head, as in a person exposed to the direct rays of the sun; frequently produces apoplexy.

The general application of heat to the body, is a frequent exciting cause.

Excess in venery sometimes excites a paroxysm of this disease.

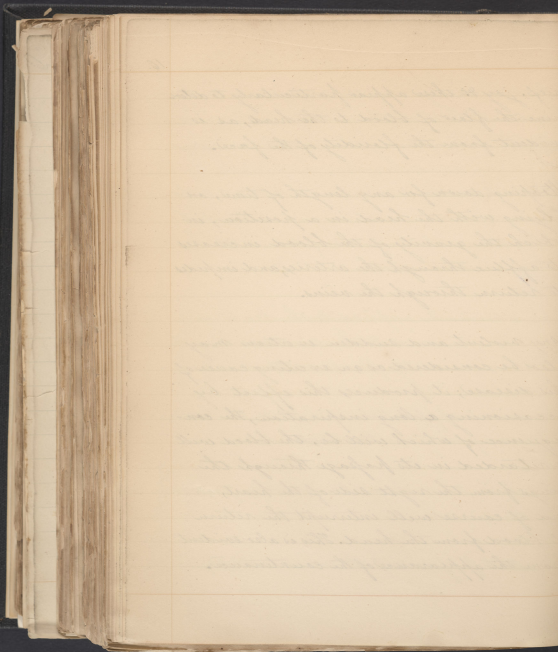
Violent passions of the mind, as anger;



grief, joy &c these appear particularly to determine the flow of blood to the head, as is evident from the floridity of the face.

Stooping down for any length of time, or lying with the head in a position, in which the gravity of the blood increases its afflux through the arteries, and impedes its return through the veins.

Any violent and sudden exertion may also be considered as an exciting cause of this disease; it produces this effect by occasioning a long inspiration, the consequence of which will be, the blood will be retarded in its passage through the lungs from the right side of the heart, and of course will interrupt the return of blood from the head. This is also evident from the appearance of the countenance.



Flexion and twisting of the neck, tumors, or any considerable impediment to the free passage of blood in the internal jugular veins, will excite apoplexy.

Extreme intoxication, and food of difficult digestion in the stomach, will sometimes bring on a fit of this disease.

Breathing the vitiated air in a crowded assembly will frequently occasion apoplexy. The various narcotics will sometimes produce a similar effect.

Vomiting is supposed to be a powerful exciting cause, as the contents of the abdominal viscera are in this case, violently compressed, the diaphragm and muscles of the abdomen are convulsed, consequently the blood in the ascending vena cava will

and the other of the same kind, but
the first is the only one that
has been found in the same place
and will not be found again.

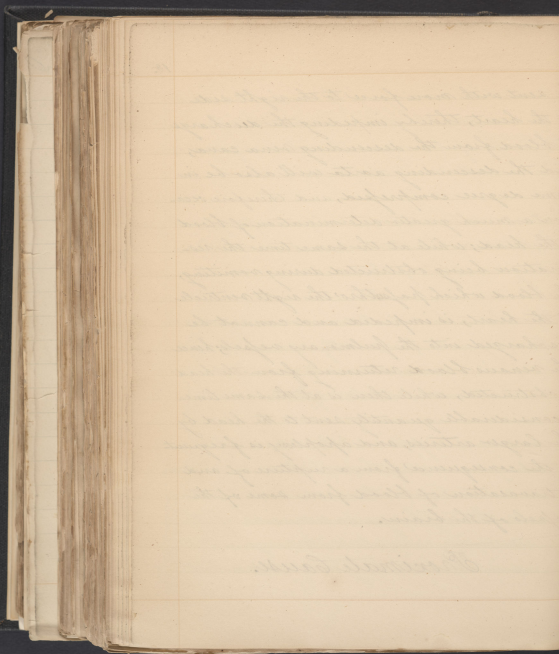
The first is the only one that
has been found in the same place
and will not be found again.

The second is the only one that
has been found in the same place
and will not be found again.

The third is the only one that
has been found in the same place
and will not be found again.

be sent with more force to the right side of the heart, thereby impeding the discharge of blood from the descending vena cava, and the descending aorta will also be in some degree compressed, and therefore occasion a much greater determination of blood to the head; while at the same time the respiration being obstructed during vomiting, the blood which passes thro' the right ventricle of the heart, is impeded and cannot be discharged into the pulmonary vessels; hence the venous blood returning from the head is obstructed, while there is at the same time a considerable quantity sent to the head by the larger arteries, and apoplexy is frequently the consequence from a rupture of and extravasation of blood from some of the vessels of the brain.

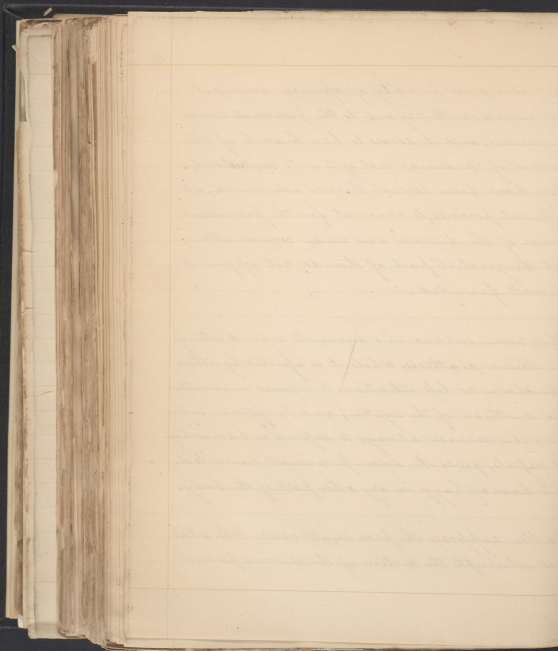
Proximate Cause.



There is a great diversity of opinion amongst physicians, with regard to the proximate cause of diseases, and it seems to be a branch of the science of Medicine not yet well understood. There have been several theories advanced, at different periods, to account for the proximate cause of the disease now under consideration; but the greatest part of them do not appear to be well founded.

Thus some suppose this disease to depend entirely on sthenic diathesis, while it is ascribed by others who claim no less attention, to depend on an asthenic diathesis of the system, and Stoffman supposing this disease always to depend on hamorrhage of vessels, gives the same proximate cause to it, as to hamorrhage in any other part of the body.

Cullen supposes the proximate cause to be whatever interrupts the motion of the nervous power

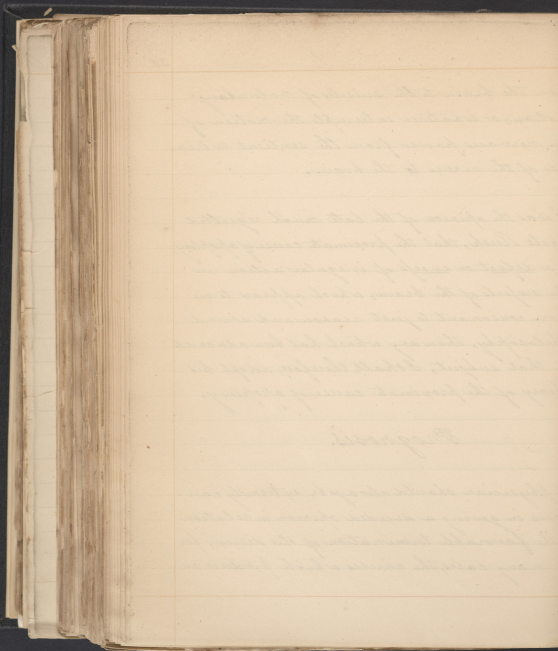


from the brain to the muscles of voluntary motion, or whatever interrupts the motion of the nervous power from the sentient extremities of the nerves to the brain.

It was the opinion of the late much regretted Doct^r Rush, that the proximate cause of apoplexy, is a defect or excess of irregular action in the vessels of the brain, which appears to me more consonant to just reason and sound philosophy, than any which has been advanced on that subject, I shall, therefore, adopt his theory of the proximate cause of apoplexy.

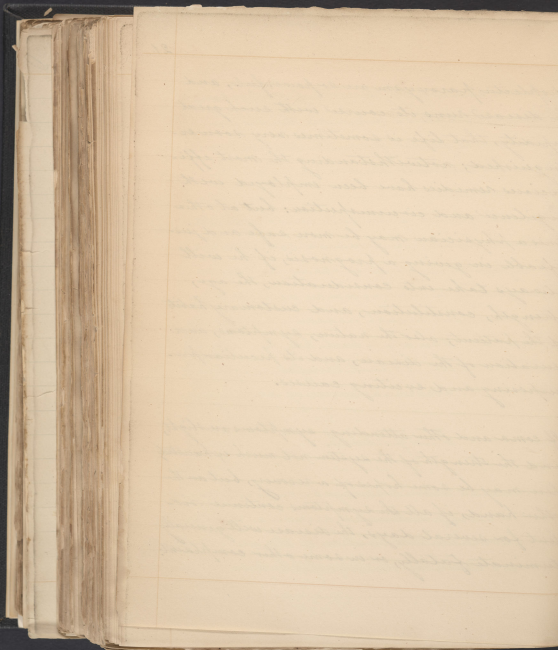
Prognosis.

A physician should always be extremely cautious in giving a decided opinion in relation to the favorable termination of this disease; for, in many cases, the causes which produce an



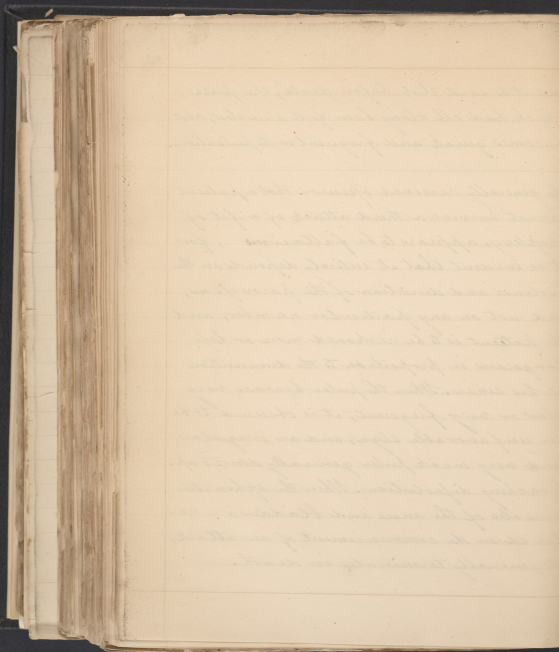
apoplectic paroxysm are so powerful, and the disease runs its course with such great rapidity, that life is sometimes very soon extinguished; notwithstanding the most efficacious remedies have been employed with vigilance and circumspection: but at other times a physician may be more safe and justifiable in giving a prognosis, if he will always take into consideration, the age, strength, constitution, and customary habits of the patient; also the nature, symptoms, and duration of the disease, and its peculiar predisposing and exciting causes.

If coma and other attending symptoms are slight, and the strength of the system not much exhausted, there may be some hopes of a recovery, but on the other hand, if all the symptoms continue violent for several days, the disease will generally terminate fatally, or in some other complaint.



and it is said that before death, the pulse which had all along been full and slow, now becomes quick and frequent in its pulsations.

The generally received opinion that a patient cannot survive a third attack of a fit of apoplexy, appears to be fallacious, for it is evident that it entirely depends on the violence and duration of the paroxysm, and not on any particular number, and the patient is to be reckoned more or less dangerous in proportion to the diminution of his senses. When the pulse becomes very slow or very frequent, it is observed to be an unfavorable sign, and an irregular and very weak pulse generally denotes approaching dissolution. When the sphincter muscles of the anus and bladder are relaxed in the commencement of an attack, it generally terminates in death.



When the patient loses all power of deglutition the danger is very great, as it indicates an attack of great violence; and when a cold clammy sweat comes out on the surface of the body, the countenance having a cadaverous or deadly appearance, the eyes florid and dull, the prognosis is exceedingly unfavorable, and a recovery under such circumstances is not to be expected; on the contrary, when the disease depends on a sudden cessation of any customary evacuation, and if this should return, accompanied with a gentle and equable perspiration over the whole surface of the body, the prospect is more favorable. It is observed that copious discharges of urine containing a sediment, spontaneous evacuations from the intestinal canal, and violent spontaneous vomiting, have been the means of bringing on a dissolution of the disease.

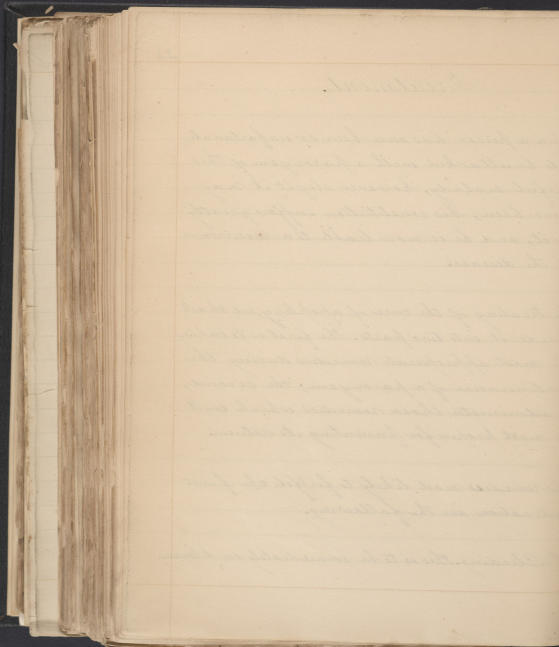
Treatment.

When a person has once been so unfortunate as to be attacked with a paroxysm of this direful malady, however slight it may have been, his constitution suffers greatly by it, and he is more liable to a recurrence of the disease.

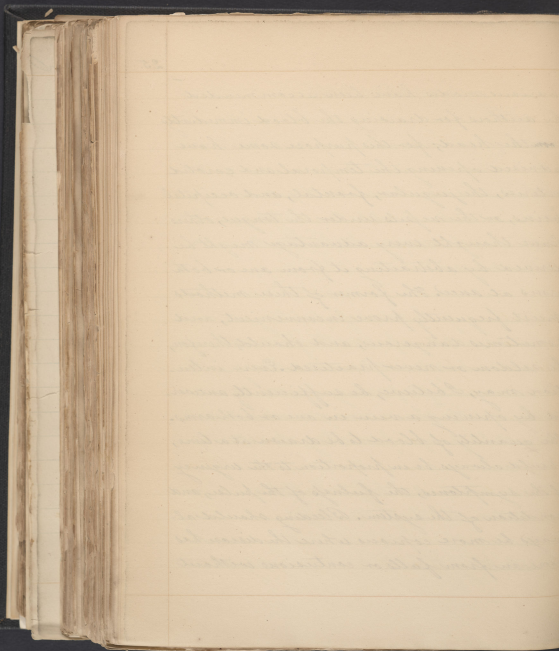
In treating of the cure of apoplexy, we shall divide it into two parts. The first is to employ the most appropriate remedies during the continuance of a paroxysm; the second, to administer those remedies which will be most proper for preventing its return.

The remedies most likely to fulfil the first indication are the following.

1st Bleeding. This is to be immediately employed.

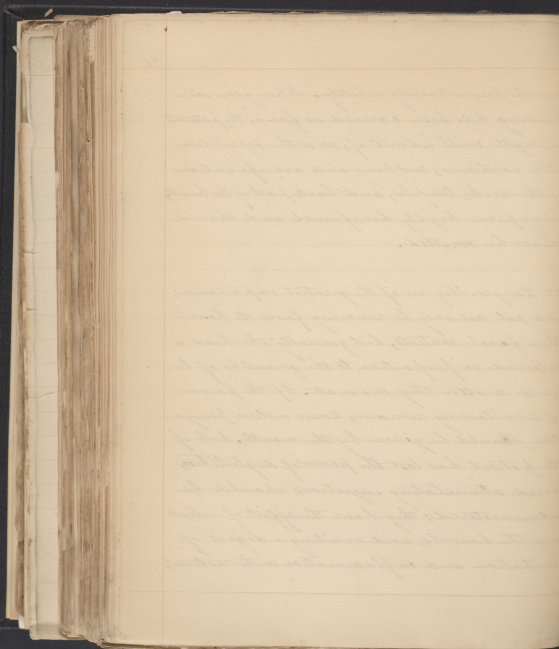


Various modes have been recommended by authors for drawing the blood immediately from the head; for this purpose some have advised opening the temporal and carotid arteries, the jugular, frontal, and occipital veins, or the vessels under the tongue, others have thought every advantage might be derived by abstracting it from one or both arms at once. The former of these methods must frequently prove inconvenient, and sometimes dangerous, and should, therefore, be seldom or never practised. Every intention may, I believe, be sufficiently answered by opening a vein in one or both arms. The quantity of blood to be drawn at a time, should always be in proportion to the urgency of the symptoms, the fullness of the pulse, and constitution of the system. Bleeding should always be more copious where the disease has come on from falls or contusions without



much predisposing debility. When general-bleeding has been carried as far as the patient's strength will admit of, and the symptoms still continue, cupping and scarifications of the neck, temples, and back part of the head, may prove highly beneficial and should never be omitted.

2^d Purgers. They are of the greatest importance, and act not only by removing from the bowels their fecal contents, but generally the head is relieved in proportion to the quantity of liquid matter they evacuate. If the power of swallowing remain, some active purgative should be given by the mouth, but if the patient has lost the power of deglutition, acrid stimulating injections should be administered; they have the effect of relieving the bowels, and exciting a degree of irritation and inflammation in the rectum;

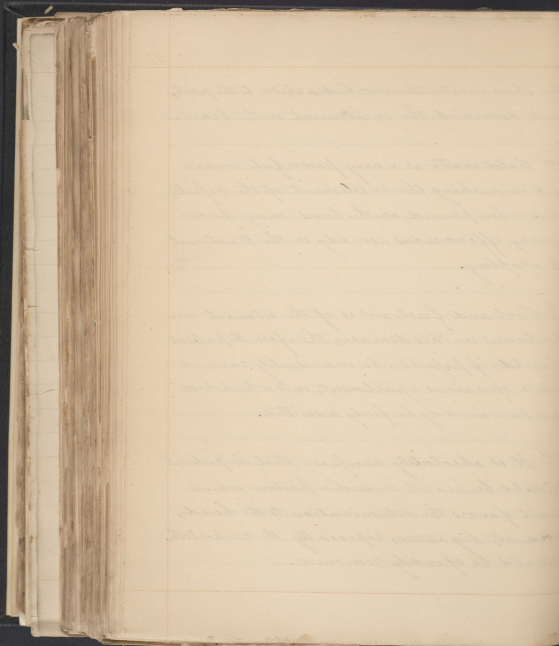


they thus invite the morbid action to the part, and diminish the excitement in the brain.

3rd Cold water is a very powerful means of diminishing the excitement of the vessels, and when poured on the head may prove a very efficacious remedy in the treatment of apoplexy.

4th Cool and fresh air is of the utmost importance in this disease, therefore the patient should, if possible, be immediately carried into a spacious apartment, into which cool and pure air may be freely admitted.

5th It is absolutely necessary that the patient should be placed in such a posture which least favors the determination to the head, and all ligatures, especially, the neck-cloth, should be speedily removed.

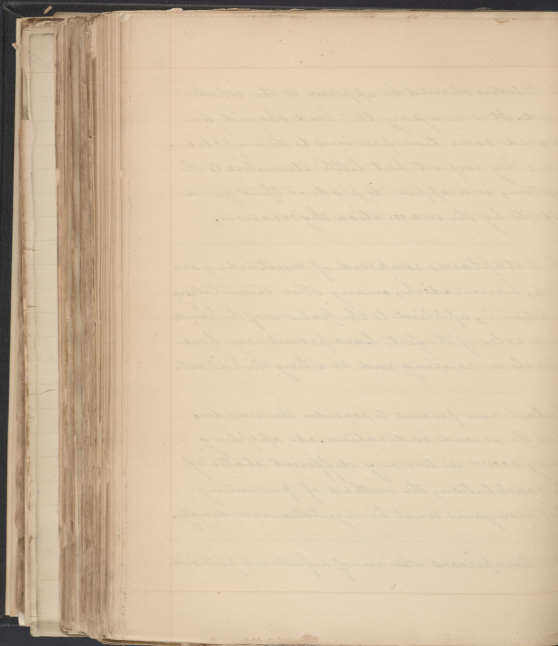


6th Blisters should be applied to the whole head. It is necessary the head should be shaved some time previous to this application: they impart but little stimulus to the system, and appear to produce their good effects by the evacuation they occasion.

7th Cataplasms composed of mustard, garlic, horse-radish, or any other stimulating substance, applied to the palms of the hands and soles of the feet, have proved very beneficial in rousing and exciting the patient.

I shall now proceed to consider the remedies for the second indication. As apoplexy may occur in two very different states of the constitution, the method of preventing the paroxysms must be regulated accordingly.

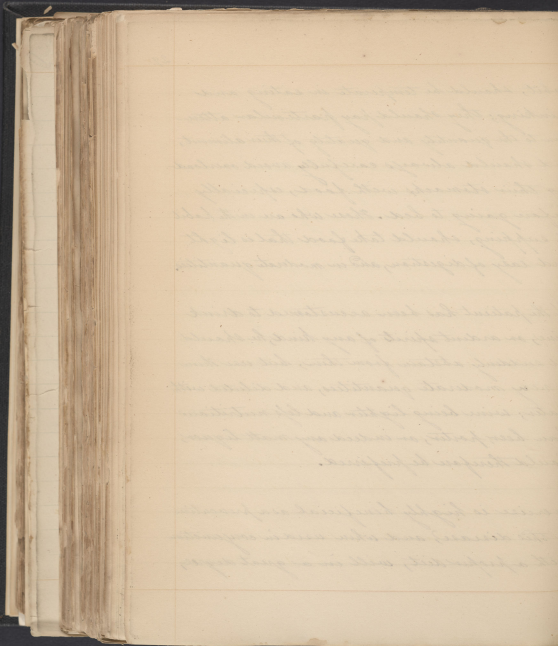
All those persons who are of a full and plethoric



habit, should be temperate in eating and drinking; they should pay particular attention to the quantity and quality of their aliment, and should always carefully avoid overloading their stomachs with food, especially before going to bed. Those who are in the habit of supping, should take food that is light and easy of digestion, and in moderate quantities.

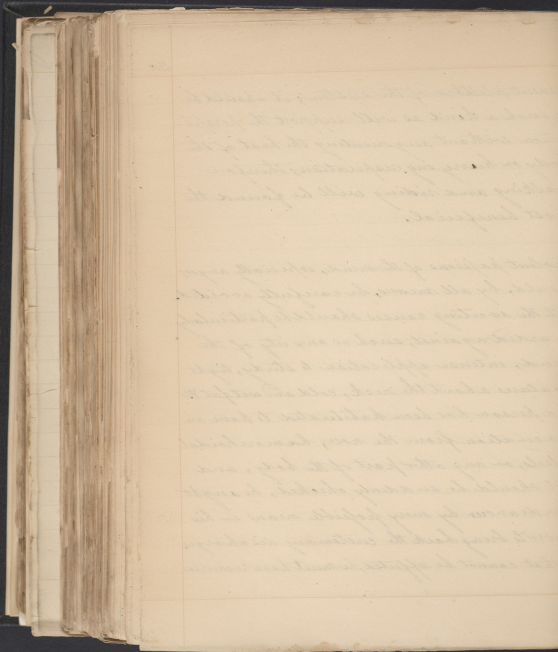
If the patient has been accustomed to drink wine, or ardent spirits of any kind, he should not suddenly abstain from them, but use them in very moderate quantities, and diluted with water; wine being lighter and less nutritious than beer, porter, or indeed any malt liquor, should therefore be preferred.

Exercise is highly beneficial as a preventive in this disease, and when used in conjunction with a proper diet, will in a great degree,



prevent plethora of the system; it should be of such a kind as will support the perspiration without augmenting the heat of the body or hurrying respiration; therefore walking and riding will be found the most beneficial.

Violent passions of the mind, especially anger, should, by all means, be carefully avoided. All the exciting causes should be particularly guarded against, such as any city of the mind, intense application to study, tight ligatures about the neck, cold and wet feet &c. If a person has been habituated to have an evacuation from the nose, hæmorrhoidal vessels, or any other part of the body, and that should be suddenly checked, he ought to endeavour by every possible means in his power to bring back the customary discharge. If that cannot be effected, he must have recourse



to an issue between the shoulder, or a seton in the neck; but great care must be taken not to allow them to dry up without opening some other drain in their stead. Old customs and habits should not be changed suddenly, but in a gradual manner. Persons who are of a delicate and weakly habit, and have symptoms of plethora and turgescence in the vessels of the head, should observe temperance in eating and drinking, and endeavour to avoid those causes which accelerate the circulation of the blood; and they ought to use gentle exercise, and every other means which might have a tendency to restore tone and vigor to the system.

If the precursory symptoms which I formerly mentioned on another occasion, should occur, notwithstanding means have been employed to prevent them, the person should be bled, take a purge, and live upon an abstemious diet.

Finis.

